

**SUMMARY OF MEETING**  
**CALLAWAY ENERGY CENTER TOUR**  
**HIGHWAY CC & O, FULTON, MO**  
**TUESDAY, OCTOBER 29, 2013**  
**9:30 a.m. to 11:30 a.m.**

On Tuesday, October 29, 2013, a presentation and tour of the Callaway Energy Center was given to members of the Missouri Public Service Commission. Those attending from the MPSC included Commissioner Daniel Hall, Shelley Brueggemann and Jennie Wells.

Those participating from Ameren Missouri included Senior Vice President and Chief Nuclear Officer Adam Heflin, Legislative Representative Rick Eastman, Business Planning Specialist Anne Roselius, and State Regulatory Liaison Gaye Suggett.

Lewis Mills, Office of the Public Counsel was invited.

All participants were welcomed and a presentation of the Callaway Energy Center was given. That presentation is attached.

# *An Overview of Ameren Missouri's Callaway Energy Center and Nuclear Power*

2013

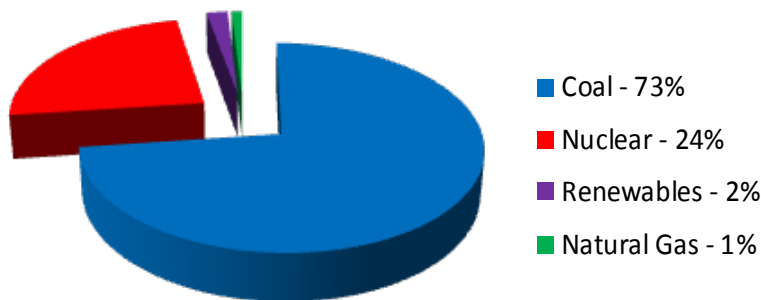


# AMEREN MISSOURI

## Ameren Missouri (orange)

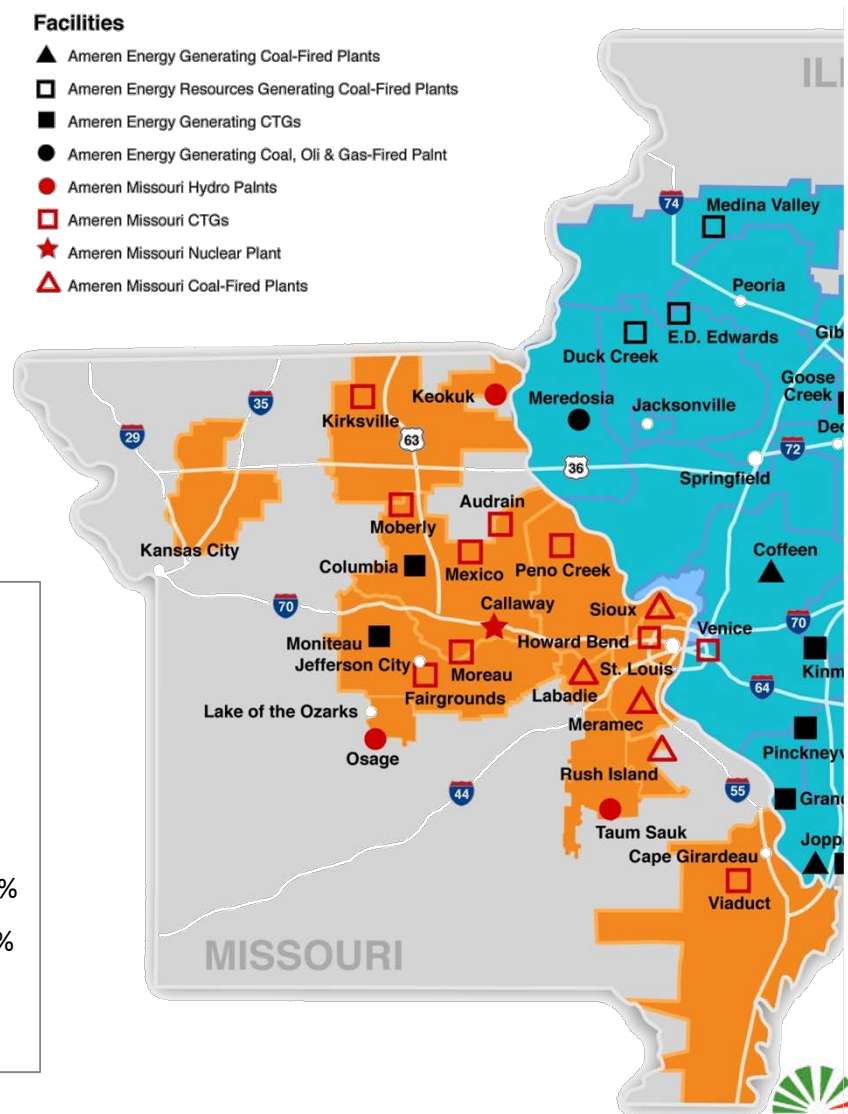
- 1.2 million Electric customers
- 126,000 Natural Gas customers
- 500 communities served
- 24,000 square mile territory
- 4,000 Employees

2013 Fuel Mix



### Facilities

- ▲ Ameren Energy Generating Coal-Fired Plants
- Ameren Energy Resources Generating Coal-Fired Plants
- Ameren Energy Generating CTGs
- Ameren Energy Generating Coal, Oil & Gas-Fired Plant
- Ameren Missouri Hydro Plants
- Ameren Missouri CTGs
- ★ Ameren Missouri Nuclear Plant
- △ Ameren Missouri Coal-Fired Plants



# AMEREN MISSOURI GENERATION...over 10,000 MW

**Meramec**  
STL Co.  
839 MW  
1953



**Sioux**  
St. Charles Co.  
986 MW  
1967



**Labadie**  
Franklin Co.  
2,407 MW  
1970



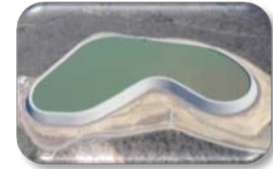
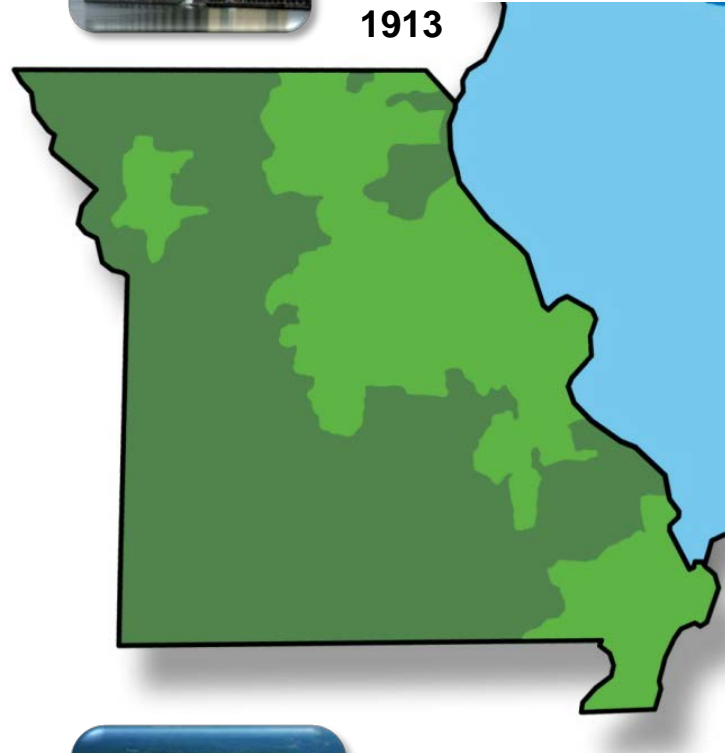
**Rush Island**  
Jefferson Co.  
1,204 MW  
1976



**Keokuk**  
Iowa  
137 MW  
1913



**CTGs**  
MO & IL  
2,966 MW



**Taum Sauk**  
Reynolds Co.  
440 MW  
1963 & 2010



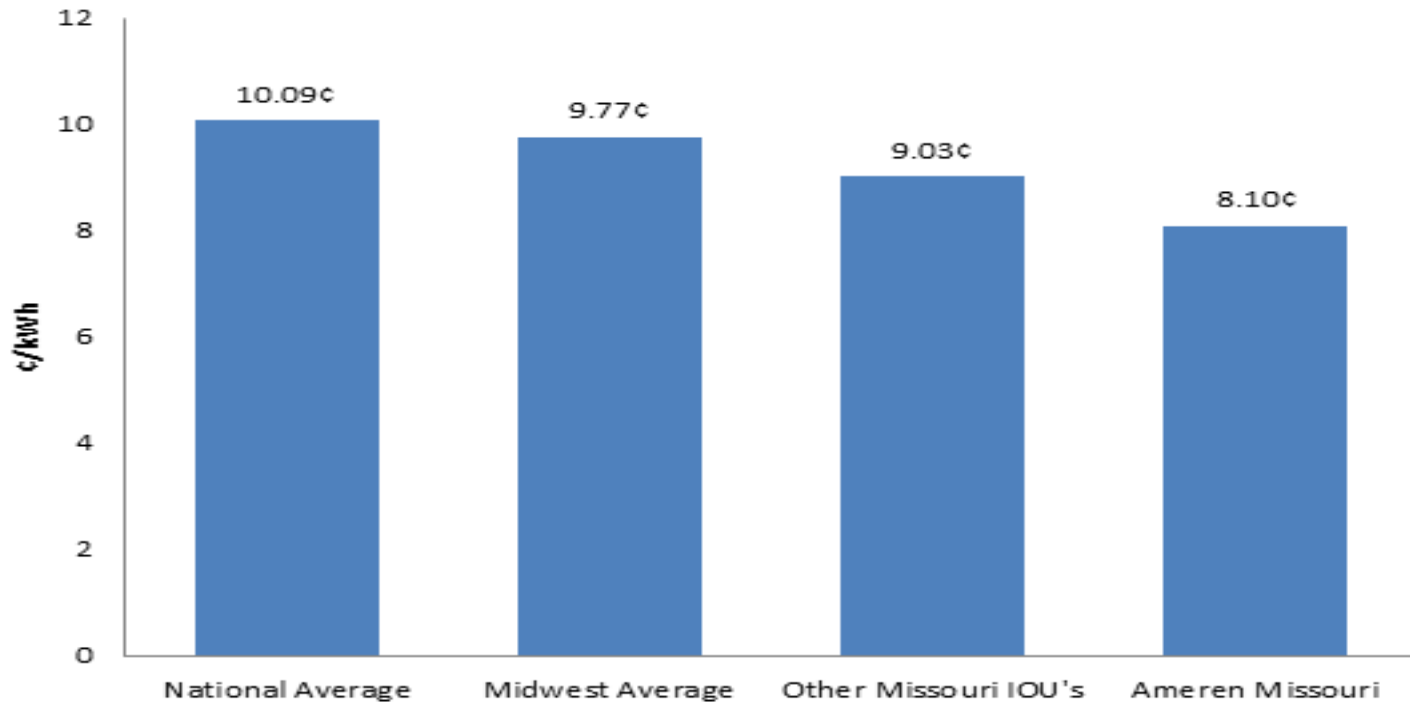
**Osage**  
Lakeside, MO  
234 MW  
1931



**Callaway**  
Callaway Co.  
1,200 MW  
1984

# AMEREN MISSOURI RESIDENTIAL RATES

## COMPARISON OF AMEREN MISSOURI TOTAL RETAIL RATES



Sources and Notes: EEI Winter Typical Bill and Average Rates Report, Midwest States based on US Census definitions. Averages are for 12 months ending December 2012 with Ameren Missouri rates projected forward to include results of Rate Case ER-2012-0166 effective January 2, 2013.



# NUCLEAR ENERGY 101

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## and AMEREN MISSOURI'S CALLAWAY ENERGY CENTER



# QUESTION:

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How many nuclear plants are operating in the United States?

- A) 17
- B) 39
- C) 100
- D) 565

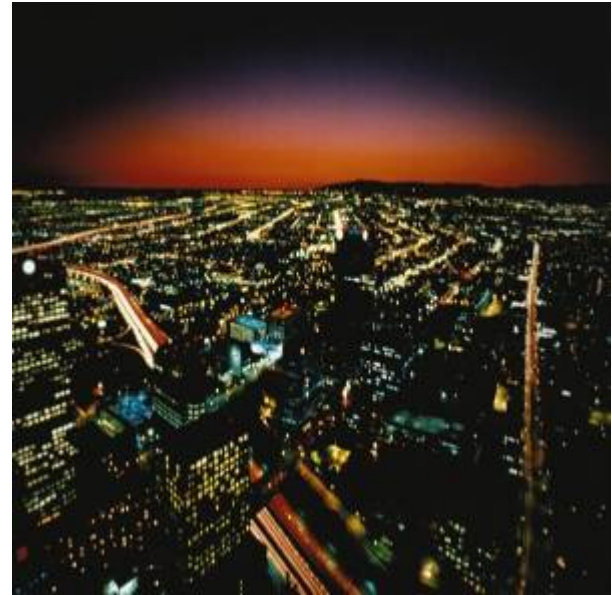


## QUESTION:

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Nuclear power provides what percentage of electricity in the United States?

- A) 5 percent
- B) 20 percent
- C) 46 percent
- D) 63 percent





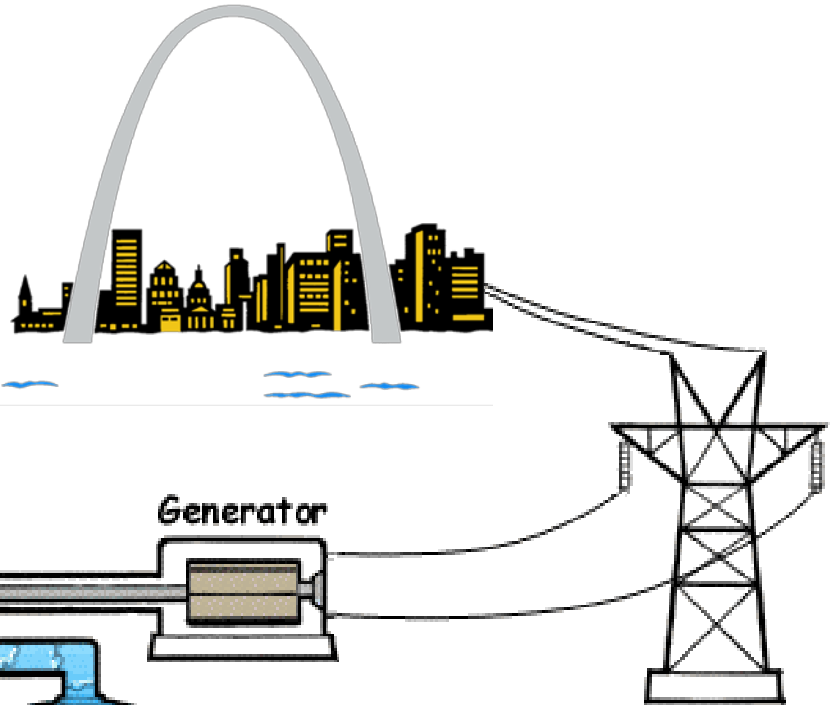
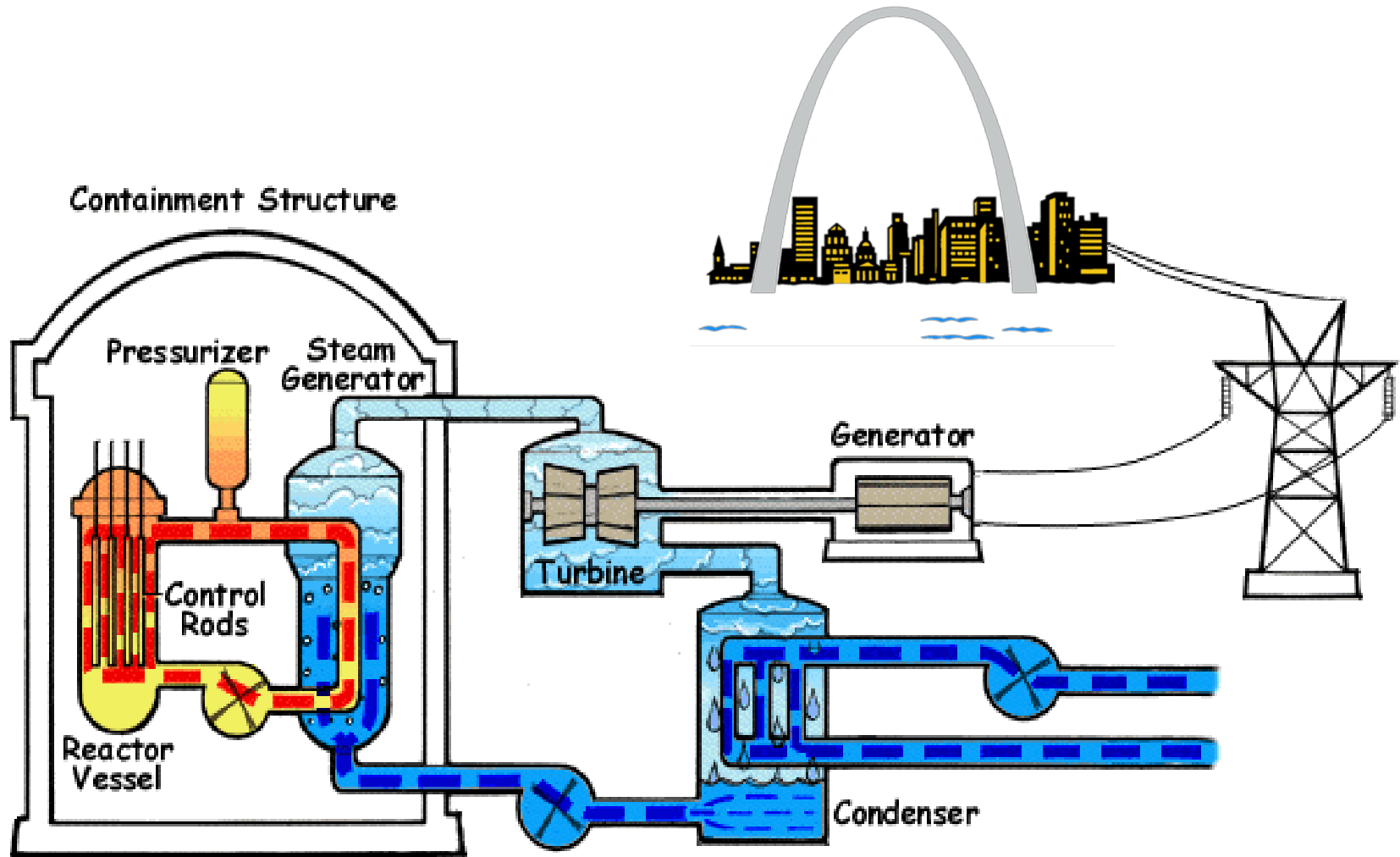
# UNITED STATES

- Largest producer of nuclear energy in the world
- Nuclear energy provides 20% of U.S. electricity
- A 1,200 megawatt reactor like Callaway powers 700,000 average households each year
- Oldest operating plant is located in Oyster Creek, N.J. (1969)

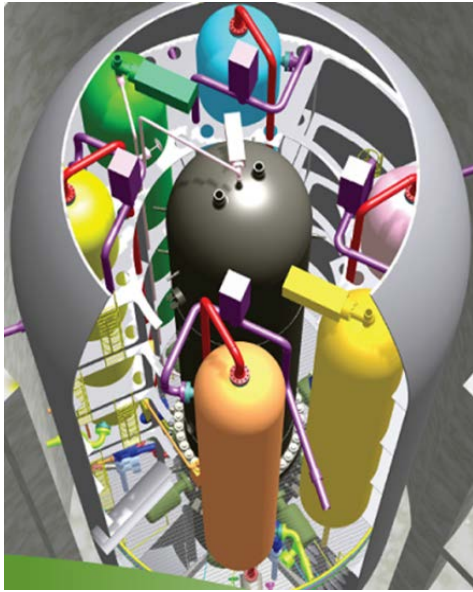
100 reactors in 31 states



# HOW DOES NUCLEAR ENERGY WORK?



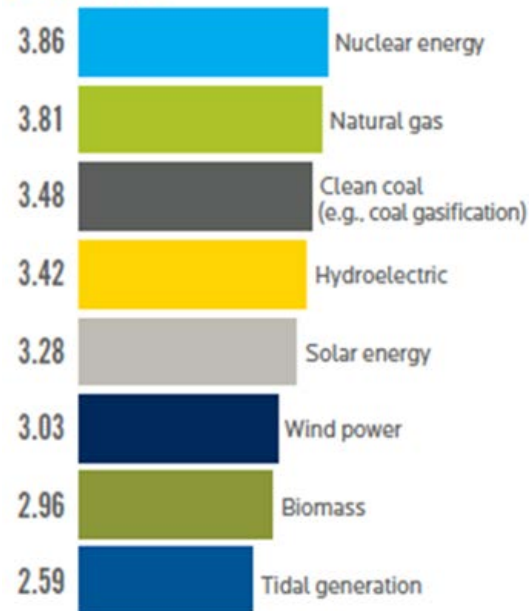
# SMALL MODULAR REACTORS CAN BE IN OUR FUTURE!



- Improved reliability
- New jobs
- Cleaner generation
- Energy Efficiency
- Renewable Energy

SMRs can present game-changing opportunities for our state's electric grid and Missouri's consumers

## PREFERRED "ENVIRONMENTALLY FRIENDLY" TECHNOLOGIES



# WHAT THIS OPPORTUNITY MEANS FOR MISSOURI

## More than **3x** the Opportunity

**\$7.3**  
BILLION  
PER YEAR



**TOP MISSOURI  
AGRICULTURAL  
BUSINESSES**

**\$25**  
BILLION  
PER YEAR



# AMEREN MISSOURI'S FOCUS

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- Our focus is on providing customers with safe, reliable, clean and affordable energy





# CALLAWAY ENERGY CENTER – REFUEL 19

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- Refueling and maintenance outage began April 8 – 50 days
- RF19 concluded a 500-day run of continuous operations (2<sup>nd</sup> longest)
- Outage Workforce
  - 815 Ameren Missouri Callaway employees
  - An additional 800 workers from 36 different contractors
    - Over half of these outage contractors are union workers from MO
- Major projects
  - Refuel the reactor (89 new fuel assemblies)
  - Main Transformer Replacement
  - Digital Feed Water Controls
  - Reactor Coolant Pump (RCP) Shutdown Seals (No Leak Seals)
  - NFPA 805 Implementation
  - Perform thousands of maintenance activities, inspections and tests to ensure maximum safety and reliability when the plant returns to service.

# WHAT YOU WILL DO ON THE PLANT TOUR TODAY

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- What you will do and see
  - Put on personal protective equipment (hard hat, safety glasses and hearing protection)
  - Walk into the power block of the plant

# SAFETY BRIEF

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- Our highest value – three types
  - **Nuclear** – our employees see to that every day – security is highly trained and well armed
  - **Radiological** – special ALARA brief
  - **Industrial** - This is **an industrial environment**
    - Hazards
      - Icy/wet surfaces
      - Trip hazards such as floor grating and concrete curbs
      - Hot pipes
      - High noise
      - Don't touch or bump any plant equipment
    - Personal Protective Equipment will be issued
      - Hard hats
      - Safety glasses
      - Earplugs

# SECURITY BRIEF

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- No cell phones – leave them here
- No cameras – we will take pictures for you
- Stay with your assigned escort at all times – within eye sight. If you become separated from your escort, immediately contact Security or the nearest plant employee.
- Ensure your Visitor Badge is displayed in plain view at all times.



***FOCUSED ENERGY. For life.***